REPORT OF A CASE OF REMOVAL OF A MALIGNANT POLYP SPRINGING FROM THE BASE OF THE SKULL, IN WHICH AN ATTEMPT WAS MADE TO PRACTICE SENN'S PROPOSED METHOD OF RENDERING THE OPERATION BLOODLESS.[1]

By ROSWELL PARK, M.D.,

OF BUFFALO.

PROFESSOR OF SURGERY IN THE UNIVERSITY OF BUFFALO.

SPRINGER, aged thirty, entered the Buffalo General Hospital in October, 1892, with a case of very rapidly growing malignant tumor, completely filling the pharynx, evidently pressing down from above, pushing down the soft palate, involving the fauces and tonsils especially on the right side, and completely occluding the nasal passages. Its lower border could be seen presenting behind the border of the soft palate. Dyspnœa was extreme, and all his bad symptoms were rapidly becoming aggravated. He could only swallow soft diet, and could scarcely articulate. His case was considered as one of malignant tumor, probably fibro-sarcoma, with an excess of sarcomatous elements, springing from the base of the skull. The patient fully appreciated his desperate condition, and solicited operation at whatever hazard, stating that he preferred death on the table to a lingering death from his disease.

At his request and full assumption of all risk, operation was undertaken in clinic, under chloroform, on the morning of October 15, 1892. Fearing accident during the administration of the anæsthetic, I had it administered upon the operating table before the class, and not in the ante-room, as is customary. Before complete anæsthesia was obtained he became cyanosed, and would have suffocated had I not had ready for use and used a large curved tube of the

---

[1] Read before the American Surgical Association, May 31, 1893.

Bigelow evacuator, by which I was able to let air pass into the larynx. So soon as he was asleep I exposed the trachea, but before opening it I had again to resort to the long tube. This was done because it was easier to slip this under the epiglottis and into the larynx than hastily to insert the trachea tube. I then with ordinary effort opened the trachea, and placed the tube in position, after which he breathed without difficulty.

Previous to undertaking the operation, in considering its feasibility, I recalled the experiments of Senn. He reported a number of successful experiments upon animals in isolating the trachea, and passing a rubber tourniquet around the balance of the neck, making the constriction so tight that all blood supply to the head, save that through the vertebral artery, was cut off. Senn's experimental efforts, according to his report, had been so satisfactory that without knowing whether any one had successfully repeated them upon the human subject, I decided to attempt the method in this case.

Accordingly, after making the tracheotomy, I isolated the trachea, pulled it forward, passed around the neck and back of it the ordinary Esmarch tourniquet, and constricted it so tightly that all pulsation of the vessels in the head and neck ceased. After this I raised the cheek by incision similar to Langenbeck's for excision of the upper jaw, and found that while no artery spurted, venous hæmorrhage was excessive. As quickly as possible I resected the upper jaw, and found the antrum and nasal cavities filled with the soft mass of the tumor. While trying to remove this material the patient several times stopped breathing, and it required a few attempts at artificial respiration to cause him to resume it. Finally, when I had the growth nearly removed, there was complete cessation of breathing, and all other efforts had to be discontinued while we endeavored to provoke return of normal respiration. To this end the patient was inverted and all sorts of artificial stimulation resorted to, while rhythmical motions of the arms and alternating compression of the chest were kept up. For forty-five minutes, actual time, we worked in this fashion, intermitting efforts occasionally for a few seconds to see what progress had been made. The action and regularity of the heart scarcely altered during this time, the pulse only becoming weaker when for a few seconds the artificial respiration was stopped. We found that the only way to keep the heart going was to make him breathe, and it was a great relief when at the end of the above-mentioned time it was found that his heart would beat steadily and continously, and that he would breathe when left alone. It should be mentioned that shortly after this phenomenon first appeared, constriction about the neck was relieved and the rubber band removed. When at the conclusion of this time pulse and respiration had become again fairly normal, though weakened, the original operation was resumed, the tumor cleared out from the naso-pharyngeal cavity, the source of origin, *i.e.*, the lower surface of the body of the sphenoid, cauterized, the cavity packed with gauze, and the wound closed in the usual manner. At the close of the operation he left the table apparently in as good condition as when brought in. The patient died the next morning of shock, there apparently having been no bleeding more than a trifling oozing in the meantime.

During the efforts at resuscitation I was materially assisted by Drs. Phelps and Parmenter, who assumed a large part of the exhausting work.

I believe the case worthy of report because, so far as I know, it is the first in which such an attempt to make bloodless this terrific operation has been attempted upon the human subject, and because, in the second place, there was exhibited the most singular phenomenon, which I have described, in that the heart apparently suffered very slightly from pressure upon the pneumogastrics while the function of respiration was for a period of three-quarters of an hour almost entirely lost, and this presumably from pressure upon the same nerves along with the phrenics.